

AIRWORTHINESS DIRECTIVES FINAL RULES: 98-19-02

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DOCKET NUMBER: 97-ANE-37-AD

AMENDMENT: 39-10745

AD NUMBER: 98-19-02

SUBJECT HEADING: Airworthiness Directives; Superior Air Parts, Inc., Piston Pins Installed on Teledyne Continental Motors Reciprocating Engines

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that is applicable to Superior Air Parts, Inc., piston pins installed on Teledyne Continental Motors reciprocating engines. This amendment requires removal from service of defective piston pins, and replacement with serviceable parts. This amendment is prompted by reports of numerous piston pin fractures. The actions specified by this AD are intended to prevent a piston pin failure from causing secondary engine damage resulting in loss of oil or total power failure, and from causing jamming of the engine crankshaft resulting in a catastrophic engine failure.

DATES: Effective November 9, 1998. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of November 9, 1998.

ADDRESSES: The service information referenced in the proposed rule may be obtained from Superior Air Parts, Inc. 14280 Gillis Rd., Dallas, TX 75244; telephone (800) 400-5949. This information may be examined at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Paul Madej, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, 2601 Meacham Blvd., Ft. Worth, TX 76137-4298; telephone (817) 222-4635, fax (817) 222-5785.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to Superior Air Parts, Inc., piston pins installed in Teledyne Continental Motors IO-360-A, -AB, -C, -CB, -D, -DB, -G, -GB, -H, -HB, -J, -JB, -K, -KB; LTSIO-360-E, -EB, -KB; TSIO-360-A, -AB, -B, -C, -CB, -D, -DB, -E, -F, -FB, -GB, -H, -HB, -JB, -KB, -LB, -MB series reciprocating engines was published in the Federal Register on February 17, 1998 (63 FR 7739). That action proposed to require removal from service of defective piston pins and replacement with serviceable parts. Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

One commenter states that the cost to U.S. operators of the proposed AD will be far greater than documented by the FAA. The FAA does not concur. Only 2,322 of the suspect piston pins were shipped. The NPRM assumed a worst case scenario based on each suspect piston pin being installed in a different engine. If, as the commenter had assumed, the suspect piston pins were installed in groups of six, the total cost would be far less than estimated in the NPRM (\$585,516 compared to the NPRM's estimate of \$1,300,320). In addition, to date at least 1,000 of the suspect piston pins have now been removed from service. As a result, the cost impact is lower than originally estimated in the NPRM and has been revised in this final rule.

One commenter states that the NPRM implies that suspect piston pins could have been installed in accordance

with the Superior Parts mandatory service bulletin. The commenter also disagrees with the proposed definition of a serviceable piston pin, stating that any approved piston pin should qualify as serviceable. Finally, the commenter points out that an incorrect part number was used twice under the compliance section of the NPRM. The FAA concurs in part but disagrees with the commenters suggestion regarding the definition of a serviceable piston pin. The AD has been clarified to state that a determination that a suspect piston pins could have been installed should be made referring to the mandatory service bulletin. This should eliminate any implication that the suspect piston pins were installed in accordance with the mandatory service bulletin. Also, the incorrect piston pin part numbers have been corrected. The AD continues to define as serviceable, however, only those piston pins that can be verified not to be a PMA Superior Air Parts piston pin shipped from Superior between August 1, 1994 and June 20, 1996. Of course, before installing a piston pin that meets that definition, an operator must also insure that the particular piston pin is approved for installation on that particular engine. The FAA disagrees with the commenter's suggestion to define as serviceable any approved piston pin. That definition may not eliminate from service the very suspect piston pins that the AD requires operators to remove. After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes described above. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

The FAA estimates that there are at most approximately 1,322 engines installed on aircraft of U.S. registry that will be affected by this AD, that it will take approximately 6 work hours per engine to accomplish the required actions, and that the average labor rate is \$60 per work hour. Required parts are estimated to cost \$200 per engine. Based on these figures (which assume one pin per engine), the total cost impact of the AD on U.S. operators is estimated to be \$740,320.

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES." List of Subjects in 14 CFR Part 39 Air Transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows: PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701. §39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

REGULATORY TEXT: 98-19-02 Teledyne Continental Motors With Superior Air Parts, Inc. PMA Piston Pins, Part Number (P/N) SA629690: Amendment 39-10745 Docket 97-ANE-37.

Applicability: Superior Air Parts, Inc., Parts Manufacturer Approval (PMA) piston pins, Part Number (P/N) SA629690, shipped from Superior Air Parts, Inc., from August 1, 1994, through June 20, 1996, installed in Teledyne Continental Motors IO-360-A, -AB, -C, -CB, -D, -DB, -G, -GB, -H, -HB, -J, -JB, -K, -KB; LTSIO-360-E, -EB, -KB; TSIO-360-A, -AB, -B, -C, -CB, -D, -DB, -E, -F, -FB, -GB, -H, -HB, -JB, -KB, -LB, -MB series reciprocating engines which were overhauled or had cylinder head maintenance performed by a repair facility other than Teledyne Continental Motors after August 1, 1994. These engines are installed on but not limited to the following aircraft: Cessna 172XP, 336, 337, T337, P337, and T-41B/C (military); Maule M-4-210, M-4-210C, M-4-210S, M-4-210T, and M-5-210C; Swift Museum Foundation, Inc. GC-1A, GC-1B, New Piper Inc. PA-28-201T, PA-28R-201T, PA-28RT-201T, PA-34-200T, and PA-34-220T; Reims FR172, F337, and

FT337; Goodyear Airship Blimp 22; Mooney M20-K; and Pierre Robin HR100.

Note 1: Shipping records, engine logbooks, work orders, and parts invoices checks may allow an owner or operator to determine if this AD applies.

Note 2: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent a piston pin failure from causing secondary engine damage that results in loss of oil or total power failure, and from causing jamming of the engine crankshaft resulting in a catastrophic engine failure, accomplish the following:

- (a) If an engine has not had a piston pin installed after August 1, 1994, or if an engine has had a piston pin installed after August 1, 1994, but it was installed by Teledyne Continental Motors, then no action is required.
- (b) For engines that had a piston pin installed after August 1, 1994, by an entity other than Teledyne Continental Motors, within 25 hours time in service (TIS) after the effective date of this AD, referring to Superior Air Parts, Inc. Mandatory Service Bulletin (SB) No. 96-001, dated August 5, 1996, determine if a suspect Superior Air Parts, Inc. PMA piston pin, P/N SA629690, could have been installed. If unable to verify that a suspect piston pin was not installed using a records check, disassemble the engine in accordance with the applicable Maintenance Manual or Overhaul Manual, visually inspect or verify for suspect piston pins, and accomplish the following:
 - (1) If it is determined that suspect Superior Air Parts, Inc. PMA piston pins, P/N SA629690, could have been installed, remove from service defective piston pins and replace with serviceable piston pins.
 - (2) If it is determined that suspect Superior Air Parts, Inc. PMA piston pins, P/N SA629690, could not have been installed, no further action is required.
- (c) For the purpose of this AD, a serviceable piston pin is any piston pin approved for the application that has been verified not to be a Superior Air Parts, Inc. PMA piston pin, P/N SA629690, shipped from Superior Air Parts, Inc., from August 1, 1994, through June 20, 1996. Installation of a Superior Air Parts Inc. PMA piston pin, P/N SA629690, that can not be verified to be outside of the suspect shipping period range, is prohibited after the effective date of this AD.
- (d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Special Certification Office. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Special Certification Office.

Note 3: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Special Certification Office.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the inspection may be performed.

(f) The actions required by this AD shall be done referring to the following Superior Air Parts, Inc. Mandatory Service Bulletin:

Document No	Pages	Revision	Date
96-001 4	4	Original	August 5, 1996
Total Pages: 4			

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of Superior Air Parts, Inc. Mandatory Service Bulletin No. 96-001 may be obtained from Superior Air Parts, Inc., 14280 Gillis Road, Dallas, TX. 75244; telephone (800) 400-5949, fax (800) 238-8471. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street

NW., suite 700, Washington, DC.

(g) This amendment becomes effective on November 9, 1998.

FOOTER: